

Cobra

12 BAND S-X-R-S

Operating Instructions



**12 BAND™
MAXIMUM-PERFORMANCE
DIGITAL RADAR/LASER
DETECTOR WITH SUPER-XTREME
RANGE SUPERHETERODYNE™
TECHNOLOGY**

XRS 989

Printed in China
Part No. 490-454-P
Version A

The Cobra line of quality products includes:

- CB Radios
- microTALK® Radios
- Radar/Laser Detectors
- Safety Alert® Traffic Warning Systems
- Mobile GPS Navigation Systems
- HighGear® Accessories
- CobraMarine® VHF Radios
- Marine Chartplotters
- Power Inverters
- Accessories

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www.cobra.com



Important Information and Customer Assistance

Important Information

Federal Laws Governing the Use of Radar Detectors

It is not against federal law to receive radar transmissions with your Cobra radar/laser detector. The Communications Act of 1924 guarantees your right to receive radio transmissions on any frequency. Local laws that contravene this Act, while illegal, may be enforced by your local law enforcement officials until and unless they are prohibited from doing so by federal court action.

Safety/Strobe Alert

Use of this product is not intended to, and does not, ensure that motorists or passengers will not be involved in traffic accidents. It is only intended to alert the motorist that an emergency vehicle equipped with a Cobra Safety Alert, 3M or strobe transmitter is within range as defined by that product. Please call local fire and police departments to learn if coverage exists in your area.

Safe Driving

Motorists, as well as operators of emergency or service vehicles, are expected to exercise all due caution while using this product, and to obey all applicable traffic laws. Do not attempt to change settings of the unit while in motion.

Security of Your Vehicle

Before leaving your vehicle, always remember to conceal your radar detector in order to reduce the possibility of break-in and theft.

Customer Assistance

Customer Assistance

Should you encounter any problems with this product, or not understand its many features, please refer to this owner's manual. If you require further assistance after reading this manual, Cobra Electronics offers the following customer assistance services:

For Assistance in the U.S.A.

Automated Help Desk English only. 24 hours a day, 7 days a week 773-889-3087 (phone).

Customer Assistance Operators English and Spanish. 8:00 a.m. to 6:00 p.m. Central Time Mon. through Fri. (except holidays) 773-889-3087 (phone).

Questions English and Spanish. Faxes can be received at 773-622-2269 (fax).

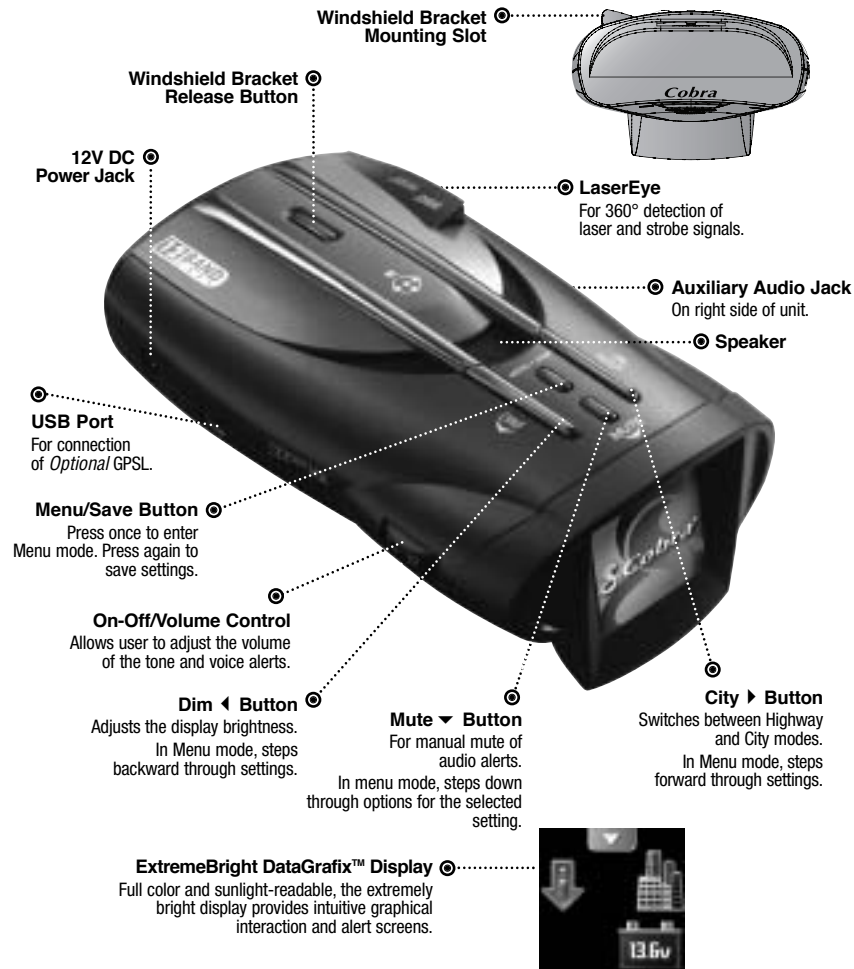
Technical Assistance English only. www.cobra.com (on-line: Frequently Asked Questions). English and Spanish. productinfo@cobra.com (e-mail).

For Assistance Outside the U.S.A.

Contact Your Local Dealer

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Chicago, Illinois 60707 USA
www.cobra.com

Controls, Indicators, Connections and Display



Product Features

Congratulations! You've made a smart choice by purchasing a maximum performance digital radar/laser detector from Cobra. Just look at some of the sophisticated features and capabilities your new unit includes:

Super-Xtreme Range Superheterodyne Technology

With super-fast sweep circuitry, S-XRS provides maximum detection range and the best possible advance warning to even the fastest radar guns

Maximum Performance

Provides advanced warning with maximum detection range for total protection.

Detection and Separate Alerts

For radar signals (X, K, Ka and Ku bands, with signal strength indicated), laser signals, Safety Alert signals, Strobe Alert signals, VG-2 signals, Spectre 1 signals

8-Point Compass

Displays direction of travel

LaserEye

For 360° detection of laser and strobe signals

Instant-On Ready

Detects radar guns with "instant-On" (very fast) speed monitoring capabilities

Pop Detection

Detects the latest super-fast radar guns of the instant-On or single-pulse type

Voice or Tone Alert

With adjustable volume

ExtremeBright DataGrafix™ Display II

With easy-to-read graphical user interface and cool 3D graphics

IntelliShield False Signal Rejection

Reduces falsing in urban areas with Highway mode and three levels of City mode settings

Safety Alert

Traffic warning system distinguishes important safety alerts from other K band signals

Strobe Alert

Emergency vehicle warning system

Manual Mute or Auto Mute

A mute function of audio alerts

IntelliMute

A mute function which automatically reduces false alerts by sensing engine RPMs

SmartPower

A timed power saving function that saves your car's battery

EasySet Menu

User-friendly mode selection and setting with visual guidance

Car Battery Voltage

Voltage is shown on the display and an alert can be provided when voltage goes below 11.9 volts

Customizable Display Colors

Customize the display colors to match your dash illumination

Auxiliary Audio Jack

For external speaker connection

Mounting

Mounts easily on windshield or dashboard

Optional GPS Ready (See page 33)

The *Optional* GPSL unit adds: Photo Enforced and User Alert Locations, Speed Alert and Vehicle Location (Latitude & Longitude)

Ordering From U.S.A.

Call 773-889-3087 for pricing or visit www.cobra.com.

For Credit Card Orders

Call 773-889-3087 [Press one from the main menu] 8:00 a.m. to 6:00 p.m. Central Time, Monday through Friday.

Make Check or Money Order Payable To

Cobra Electronics, Attn: Accessories Dept., 6500 West Cortland Street, Chicago, IL 60707 U.S.A.

To Order Online

Please visit our website: www.cobra.com

Item #	Description
RDA GPSL	GPS Locator Kit with Cable
420-030-N-001	Straight 12V Power Cord
420-026-N-001	Coiled 12V Power Cord
545-159-N-001	Windshield Mounting Bracket
CLP-2B	Dual Port Power Adapter

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This manual describes the simple steps for mounting, setting up and using your detector. It also provides helpful information about how radar and laser guns are used and how you can interpret the alerts you receive.

Before you begin your installation, please read the Important Information section on page A1 and use the descriptions and feature lists on pages A2 and A3 to become familiar with your new detector.

You can extend the capabilities of your detector by adding the *Optional* Global Positioning System Locator (GPSL) unit. See page 33 for its properties and page 41 for ordering information.

About Your Detector

Display

This detector's innovative new display provides more, easier-to-use information than any technology to date. Using an OLED (Organic Light Emitting Diode) screen, the display offers large graphical alerts to signals as they are detected.

Do not be concerned when the screen goes dark under the control of Display Timeout. The detector will function and alerts will appear as signals are detected. You can change the user setting to keep the display On all the time to show one of the standby screens. You can also turn On the magnetic Compass and IntelliMute features.

Menu

EasySet Menu allows you to conveniently customize the operation of your detector by changing the settings. You may want to start using the detector with the factory settings and then make changes after you are more familiar with the unit.

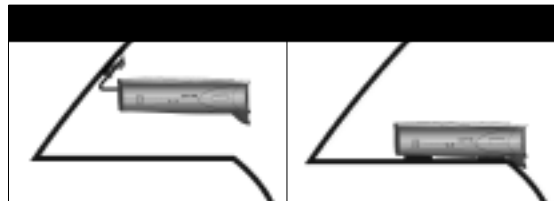
About This Manual

Once the detector is in use, the modular descriptions in this manual can be used as a ready reference to individual topics as needed. Each topic is completely covered in its section and cross-references to related topics are included where appropriate.

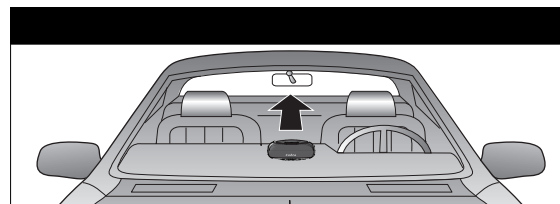
Installation

Where to Mount Your Unit

You will get optimum performance from your detector if you mount it at a point approximately in the center of the vehicle, as low as possible on the front windshield without obstructing the unit's view of the road either to the front or rear. You can also mount it directly on the dashboard.





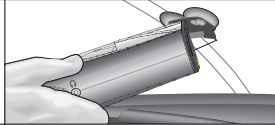


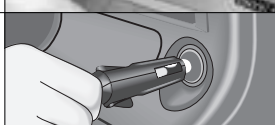
The unit's lens must not be blocked and the LaserEye should have a clear view out the back window to allow 360° detection.



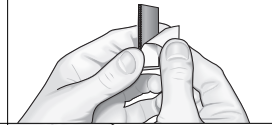
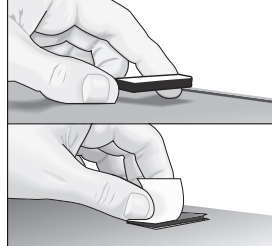


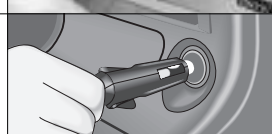
Radar and laser signals pass through glass but not through other materials and objects. Objects that can block or weaken incoming signals include:

- Windshield wiper blades
- Mirrored sun screens
- Dark tinting at the top of the windshield
- Heated windshields currently available on some vehicles (Instaclear for Ford, Electriclear for GM). Consult your dealer to see if you have this option.

Windshield Mounting

<p>1. Attach the rubber cups to the bracket.</p>	
<p>3. Push the bracket firmly onto the windshield.</p>	
<p>4. Attach the detector to the bracket. Check that the unit is parallel to the road's surface.</p>	
<p>5. To adjust the angle if necessary, gently push or pull on the bracket to bend it. DO NOT use the detector to bend</p>	
<p>6. Plug the power cord into the detector.</p>	
<p>7. Plug the cigarette lighter adapter on the power cord into your vehicle's cigarette lighter.</p>	
<p>8. You can temporarily remove the detector whenever you wish by depressing the bracket release button and sliding</p>	

Dashboard Mounting

<p>1. Place the detector on the dashboard to find a location where the unit has a clear, level view of the road and is parallel to the road's surface. The angle CANNOT be</p>	
<p>2. Remove the paper backing from one side of the hook-and-loop fastener.</p>	
<p>3. Attach the pad to the dashboard at your chosen location and remove the other paper backing.</p>	
<p>4. Attach the detector to the hook-and-loop fastener. You can remove and reattach the unit as</p>	
<p>5. Plug the power cord into the detector.</p>	
<p>6. Plug the cigarette lighter adapter on the power cord into your vehicle's cigarette lighter.</p>	

Controls

While working with this manual, page A2 can be folded out for reference to the controls on the detector unit. There are no controls on the *Optional* GPSL unit.

Power On/Off And Audio Volume

To Turn On the Unit and Adjust the Audio Volume

	Tone	Visual Display	Tone
Unit will cycle through Power On / Self Test.	None		None
Alert Settings will scroll. Check marks indicate which are set. (Factory defaults are shown when the unit is new.)	Testing, then three beeps		Testing, then three beeps
Shows only when the <i>Optional</i> GPSL is installed. See page 33 for more information.	None		None
Standby screen will show City or Highway and Car Battery Voltage icons. Compass and IntelliMute will also show if turned On and set in the User Settings Menu.	None		System Ready



NOTE

In some vehicles, power is supplied to the cigarette lighter even while the ignition is Off. If this is the case with your vehicle and you have turned the SmartPower Off, you should turn Off or unplug your detector when parking for lengthy periods. Cobra recommends leaving SmartPower at the factory setting, which is On. SmartPower is described on page 21.

Standby Screen Icons

City Mode 	Highway Mode 	Compass (Southeast) 	Car Battery Voltage
IntelliMute Above Activation Point 	IntelliMute Below Activation Point 	User and Alert Settings Menu 	Sample Screen (See note)



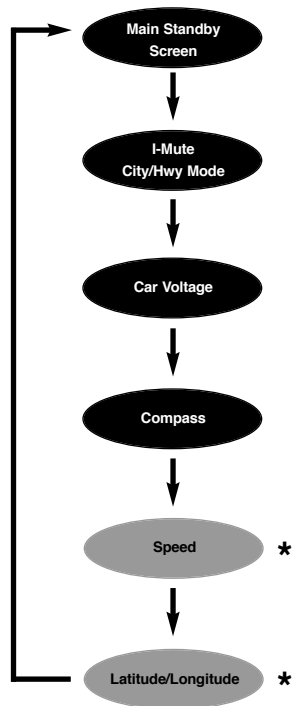
NOTE

For example, the sample screen above indicates that IntelliMute is active, the Compass is calibrated, your system is set to **City** mode and your vehicle's battery voltage is 13.6.

Standby Screens

Press **Mute** ▼ while the down arrowhead is displayed at the top center of any Standby screen to cycle through and select a different screen.

The Standby screens will be displayed in the following order:



NOTE
Last Standby screen viewed will be displayed when exiting Display Timeout mode.

NOTE
Compass will display if either the magnetic compass in the detector unit is turned On and calibrated or the *Optional* GPSL unit is installed and receiving a signal. Speed and Latitude/Longitude (marked with an *) will display only if the *Optional* GPSL unit is installed and receiving a signal.

Main Standby Screen

Displays the maximum possible information about the detector and its settings. The GPSL icon will show only if the *Optional* GPSL unit is connected. The compass will show as described in the note on page 7.



I-Mute/City or Hwy Mode

Displays the status of alert filtering (City mode) and automatic muting (IntelliMute mode). See pages 16 and 17 to set these features.



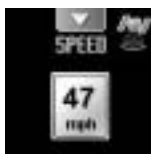
Car Voltage

Displays voltage level of your car battery. An alert will sound if the voltage drops below 11.9 volts and the Low Car Voltage Alert has been set. See page 23 to turn On the alert.



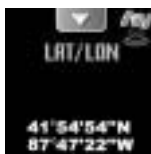
Compass

The compass indicates driving direction if either the magnetic compass in the detector unit is turned On and calibrated or the *Optional* GPSL unit is installed and receiving a signal. If neither is active the center of the compass icon will show two bars.



Speed

If the *Optional* GPSL unit is installed and receiving a signal the vehicle's speed will be shown. An alert chime will sound if the speed exceeds the Speed Alert Setting, Speed Alert has been turned On, and an alert speed has been set. (You can select mph or km/h in Menu mode.) All radar, laser, strobe and safety alerts take priority over this alert.



Lat/Lon

If the *Optional* GPSL unit is installed and receiving a signal the vehicle's present location will be shown.



Display Control

Illumination

The display illumination intensity can be adjusted to suit driving conditions:

- **Bright** for daytime driving. (Factory default is Bright, then Display Timeout after 30 seconds.)
- **Dim** for dusk driving.
- **Dimmer** for night driving.
- **Dark** to blank the screen for discreet use. In this mode, alerts will sound, but not show. (A dot will blink at the center of the screen to indicate the detector is ON.)

You can adjust the illumination by pressing the **Dim** ◀ button to step through

Display Timeout

Your detector has a **Display Timeout** mode. When Display Timeout is turned On (factory default is 30 seconds), the screen will change to Dark from Bright, Dim, or Dimmer after the time interval selected in Menu mode (see page 13). The Display Timeout setting can be changed so the display is always On.



NOTE

While at the Dark level under timer control, any alert or touching any button will turn on the display at the last brightness setting (Bright, Dim, or Dimmer).



IntelliShield Highway/City Modes

Your detector is equipped with IntelliShield false signal rejection technology which consists of a **Highway** mode and three different levels of **City** modes: City X, City X Beep Off and City X+K.

Highway mode provides full response to all signals detected. The City modes reduce false alerts while you are driving in or near urban areas where there are many sources for conflicting X or K band signals such as microwave towers and automatic door openers. The factory setting is Highway. The factory City mode default setting is City X; it can be changed in Menu mode (see page 13).

You can toggle between Highway and City modes by pressing the **City** ▶ button.



NOTE

When you change to City mode, the unit will enter whichever city default mode is set at the time.

Muting an Alert

Your detector allows you to quickly turn Off an **Audio Alert** by momentarily pressing the **Mute** ▼ button. If you press the **Mute** ▼ button a second time during the alert, the Audio Alert will be turned back On. After the current alert is gone, the next alert will be heard.

Two other features are incorporated in your detector to automatically mute or reduce the audio volume of alerts. See pages 17 and 18 for **Intellimute** and **Auto Mute** modes.

Auxiliary Audio Jack

The **Auxiliary Audio Jack** can be used to connect external speakers in environments with high ambient noise levels. The internal speaker will be disconnected. (This uses a mini stereo audio connector.)



EasySet Menu

EasySet Menu gives you quick and easy access to all the settings on your detector. It is used to select both:

- User Settings (see page 16)
- Alert Settings (see page 22)

Refer also to the Menu Flow Diagrams on pages 14 and 15 for User Settings and Alert Settings to easily navigate to the setting you want to change. All settings are stored in memory when the power is turned Off and will be recalled when the power is turned back On.



NOTE

You cannot enter Menu mode during an alert. The unit will not detect signals while in Menu mode. During menu setting, if no buttons are pressed for 15 seconds, the unit will automatically exit Menu mode and save the most recent settings.

EasySet Menu Buttons:

- **Menu/Save** button – Opens the Menu mode and Saves changes made to settings.
- **Mute** ▼ button – Changes the option at the selected setting.
- **Dim** ◀ button – Moves counterclockwise through a setting loop.
- **City** ▶ button – Moves clockwise through a setting loop.



To use EasySet Menu mode:

1. Press the **Menu/Save** button to reach the opening menu screen.
2. Choose whether you want to change:
 - a. User Settings – press the **Dim** ◀ button to enter the User Setting loop shown on page 14.
 - b. Alert Settings – press the **City** ▶ button to enter the Alert Setting loop shown on page 15.
3. Press the **Dim** ◀ or **City** ▶ buttons to step backward or forward through the chosen settings loop until the desired setting is reached.
4. Press the **Mute** ▼ button to toggle the option On or Off or to step through its multiple choices. When some options are turned On, adjustments can be made by pressing the **Dim** ◀ or **City** ▶ buttons to reach the desired value.
5. Repeat steps 3 and 4 to move to and set the next desired setting(s).
6. Press the **Menu/Save** button when finished to save the settings and exit EasySet Menu mode. Or, simply wait 15 seconds without pressing any buttons.



NOTE

If power is turned Off while in Menu mode, settings are saved to those in effect **before** Menu mode was entered.

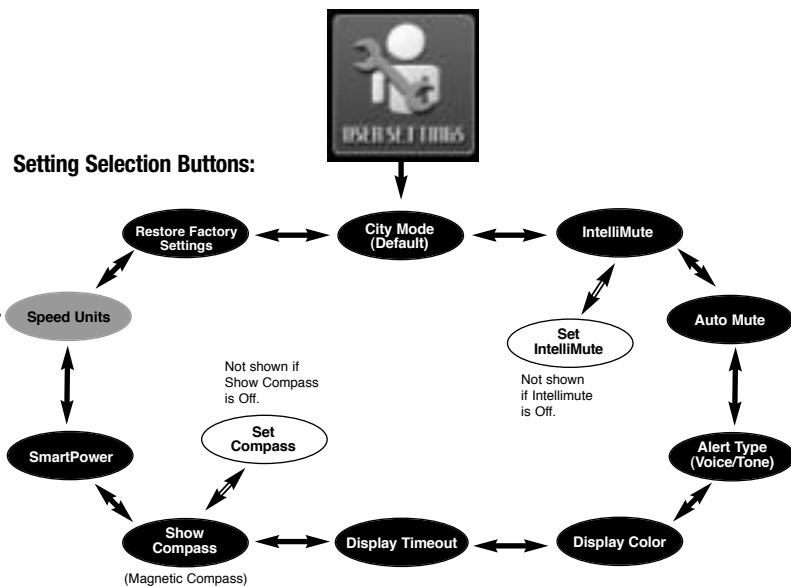


User Settings Menu

User Menu allows you to adjust the unit's display and sounds to your preferences. The **User Settings** can be selected using the **Dim ◀** and **City ▶** buttons by scrolling through the settings as shown in the menu flow diagram below. Tones, voice prompts, and visual displays will help during the process. After selecting a setting, use the **Mute ▼** button to choose an option within the setting.



NOTE
When you choose User Settings (page 13, step 2a), the system displays whichever setting was last changed.



NOTE
That marked with an * will only show if an *Optional* GPSL is installed.

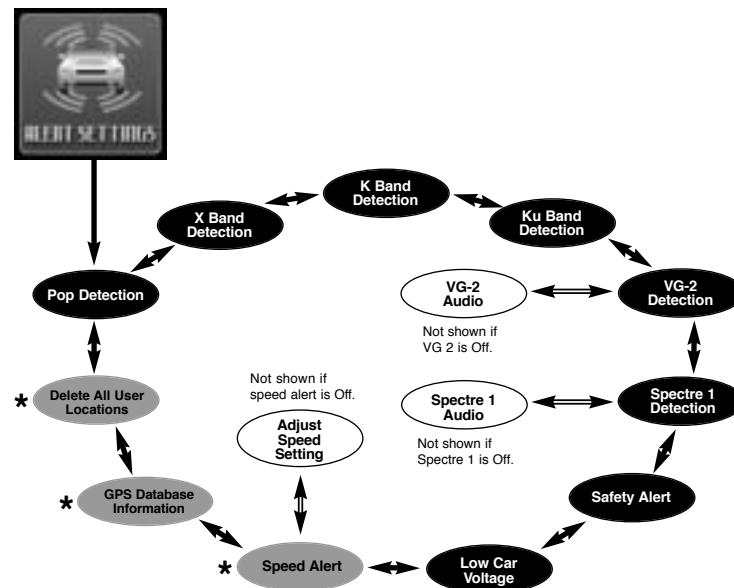


Alert Settings Menu

Alert Menu allows you to selectively turn On or Off detection of some signals. The **Alert Settings** can be selected using the **Dim ◀** and **City ▶** buttons by scrolling through the settings as shown in the menu flow diagram below. Tones, voice prompts, and visual displays will help during the process. After selecting a setting, use the **Mute ▼** button to choose an option within the setting.



NOTE
When you choose Alert Settings (page 13, Step 2b), the system displays whichever setting was last changed.



NOTE
Those marked with an * only show if an *Optional* GPSL is installed.

User Settings

IntelliShield City Mode Default

City Mode Default makes three levels of **Audio Alert** suppression available when you toggle from **Highway** to **City** mode. The factory setting is City X.

City X sounds a single beep when an X band signal is first detected. The alert then sounds when signal strength reaches level 3.

City X+K combines the City X mode with prevention of K band audio alerts until the signal strength reaches level 2.

City X Beep Off blocks all X band audio alerts until the signal strength reaches level 3.

The City Mode Default can be changed in Menu mode. It can also be changed at any time the detector is in Standby mode:

1. Press and hold the **City ▶** button. **City X** will show on the screen.
2. Release the **City ▶** button and press again to advance to **City X+K**.
3. Press **City ▶** again to advance to **City X Beep Off**.



NOTE

Further presses of the **City ▶** button will advance around the loop of choices.

4. Press **Menu/Save** button (or wait 15 seconds without pressing any buttons) to save the current setting and return to Standby mode.

IntelliMute Mode

IntelliMute is a unique feature that allows you to avoid alerts you don't need to hear because you are stopped or moving slowly. By sensing the "revs" (RPMs) of your engine, IntelliMute knows when you are at low speed and automatically mutes alerts (except for strobe signals from emergency vehicles). It works with all City and Auto Mute modes.

Before IntelliMute will work, you must set an activation point for your engine's revs (see page 18). Whenever the revs are below that point, IntelliMute will begin muting. The activation point will be stored in memory and recalled each time the power is turned On. The factory setting is IntelliMute Off.

An IntelliMute icon will appear in the display when IntelliMute is On and activation is set. Whenever engine revs are below the activation point, the arrow points down. When revs are above the activation point the arrow points up.



Above
Activation Point



Below
Activation Point

If, for any reason, the unit stops sensing your engine's revs, IntelliMute will indicate an error and automatically turn Off.



NOTE

IntelliMute may not work with some vehicles because it cannot sense the engine's revs. In such cases, you can reduce unwanted audio alerts by using Auto Mute and City mode when appropriate.



NOTE

The rev point must be reset if you use your detector in a different vehicle.



NOTE

When initially choosing your IntelliMute activation point, a setting of approximately 300 to 600 RPMs above idle is recommended. You can reset the activation point at any time to fit your individual preferences and driving style.



CAUTION

Do not attempt to set the rev point while driving. Your vehicle should be parked and idling to avoid a collision during the process.

Set IntelliMute

After the detector is installed in your vehicle and **IntelliMute** is turned On using Menu mode, advance to the **Set IntelliMute** setup screen where the activation point can be set.

From the setup screen:

1. Press the **City** ► button to advance one screen.
2. Press and hold the vehicle accelerator at the desired engine RPMs.
3. Press the **Mute** ▼ button to complete the setting process.

The system will store the engine RPM setting and provide a completion message on the display as well as a tone or voice message.



NOTE

If the unit is unable to sense usable pulses within three seconds or if you do not set a rev point within 30 seconds of beginning the setup, IntelliMute will indicate an error. If you do not try again within five seconds, it will automatically turn Off. The unit will provide corresponding messages for these conditions.

Once an activation point has been set, you can easily change it by going directly to Set IntelliMute in User Settings Menu and repeating the three-step setup process.

Auto Mute Mode

When **Auto Mute** is On, it automatically reduces the audio volume of all alerts after they have sounded for four seconds. The signals will remain muted for as long as the signal is detected. When Auto Mute is Off, the alerts will sound at full volume for as long as the signal is detected. The factory setting for Auto Mute is On.

Voice or Tone Mode

You can set your detector to sound alerts and confirm menu settings with either a **Voice** or a **Tone** Alert. Voice Alert provides voice messages in addition to tones. Tone Alert provides tones only. The factory setting is Voice Alert.

Customizable Display Colors

Your detector includes the **Color Theme** feature that allows you to customize the display screen color scheme to match your car's dash illumination: Multi-Color, Red, Blue, Orange, or Green. The factory setting is Multi-Color.

Display Timeout

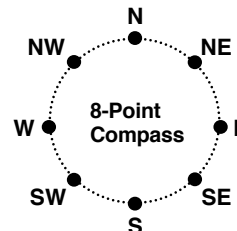
Display Timeout determines how long the Standby screen is illuminated before switching the unit to Dark. The factory default is 30 seconds.

You can set the time interval to 15 seconds, 30 seconds, one minute, three minutes or Always On (display never turns Off).

Compass Mode

Your detector includes an internal 8-point magnetic **Compass** that can continuously display your current direction of travel: N, NE, E, SE, S, SW, W, or NW.

Before the magnetic compass will work properly, it must be calibrated. Calibration allows the Compass electronics to measure and store information about the magnetic fields generated by your vehicle so direction indications will be accurate. The factory setting is Compass Off.



A Compass icon and directional heading will appear in the display when the Compass is On and calibrated.

The Compass will remain accurately calibrated as long as your detector is mounted in the same place in your vehicle. If you change the location where the unit is mounted or move it to another vehicle, you must recalibrate the Compass. You should also recalibrate the Compass if you suspect it is providing inaccurate directions.

The Compass temporarily may not provide accurate readings if you are inside a building or enclosure, or are close to a large metal tractor/trailer, truck, or train. Once you are away from such a location, the Compass will work correctly again.

If the *Optional* GPSL is installed and receiving a signal, its Compass function will override the magnetic Compass.

Set Compass

After the detector is installed in your vehicle and **Compass** is turned On using Menu mode, the system will automatically advance to the Set Compass calibration screen from which the calibration can be performed.



WARNING

Before calibrating the Compass, go to a large parking lot or other safe, low-traffic area.

When the instructions direct you to drive in two circles, make two complete loops (in either direction) from any starting orientation at any convenient speed. The loops need not be perfect and can be circles, small squares, four three-point turns, or any pattern that makes at least two complete turns within two minutes of starting the maneuver.

From the Calibrate Compass screen:

1. Press the **City** ► button to advance to the Compass screen.
2. Drive your vehicle in two circles.
3. Press the **Mute** ▼ button to complete the setting process.

The system will store the calibration data and provide a completion message on the display as well as a tone or voice message.



NOTE

If you do not press the **Mute** ▼ button within two minutes after beginning the Set Compass process, Compass calibration will automatically terminate. The unit will provide a corresponding message.

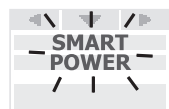
Once the initial calibration is complete, you can go to Set Compass in the User Settings Menu and recalibrate the Compass as needed by repeating the three-step calibration process.

SmartPower Mode

Your detector includes the **SmartPower** feature that, when turned On, will put the unit into Low Power mode 15 minutes after the car's engine has been turned Off.

Before SmartPower enters Low Power mode, you will hear three beeps and SmartPower will flash on the display. To return the unit to Normal Power mode and exit Low Power mode, start the car, press any button or turn the unit Off and then On again. The factory setting is SmartPower On.

SmartPower
Entering Low Power
Mode (Flashing)



Speed Units

If an *Optional* GPSL unit is installed, you can select between mph and km/h as the units of speed to be displayed.

Restore Factory Settings

From the **Restore Factory Settings** screen, you can quickly and conveniently restore your detector to its original settings. Confirmation messages are provided during the process.

Alert Settings

Pop Alert

When **Pop Detect** mode is On, Pop radar signals will be detected and an alert will be given. During the alert, the unit will continue to detect other signals. The factory setting is Pop Detect Off.

X Band Alert

When **X Band Detect** mode is On, X Band radar signals will be detected and an alert will be given. During the alert, the unit will continue to detect other signals. The factory setting is X Band Detect On.

K Band Alert

When **K Band Detect** mode is On, K Band radar signals will be detected and an alert will be given. During the alert, the unit will continue to detect other signals. The factory setting is K Band Detect On.

Ku Band Alert

When **Ku Band Detect** mode is On, Ku Band radar signals will be detected and an alert will be given. During the alert, the unit will continue to detect other signals. The factory setting is Ku Band Detect Off.

VG-2 Alert

The detector is undetectable by VG-2 detection devices and can alert you when such a device is in use near your vehicle. When **VG-2 Detect** mode is On, VG-2 signals will be detected and an alert will be given. During the alert, the unit will continue to detect other signals. The factory setting is VG-2 Detect Off.

VG-2 Audio Mode

When **VG-2 Audio** mode is On, alerts will be sounded as well as being displayed on the screen. This setting is only available if VG-2 Alert is On. The factory setting is VG-2 Audio Off.

Spectre 1 Alert

The detector is undetectable by Spectre 1 detection devices and can alert you when such a device is in use near your vehicle. When **Spectre 1 Detect** mode is On, Spectre 1 signals will be detected and an alert will be given. During the alert, the unit will continue to detect other signals. The factory setting is Spectre 1 Detect Off.

Spectre 1 Audio Mode

When **Spectre 1 Audio** mode is On, alerts will be sounded as well as being displayed on the screen. This setting is only available if Spectre 1 Alert is On. The factory setting is Spectre 1 Audio Off.

Safety Alert

When **Safety Alert** mode is On, Safety Alert radar signals will be detected and an alert will be given. During the alert, the unit will continue to detect other signals. The factory setting is Safety Alert On. Strobe Alert remains On when Safety Alert is turned Off.

Car Battery Low Voltage Warning

In addition to displaying system voltage, your detector can provide a warning that battery voltage is low so that timely steps can be taken to correct the problem. The **Car Battery Low** alert is triggered when the voltage drops below 11.9 volts. Following the alert, the unit enters SmartPower mode to avoid further draining your car battery. The factory setting is Car Battery Low Off.



NOTE

For alerts available only with the *optional* GPSL unit, see page 36.

Detection

Signals Detected

The tables on the following pages show the types of **Signals** your detector will detect, as well as the visual alerts it provides for each of them.

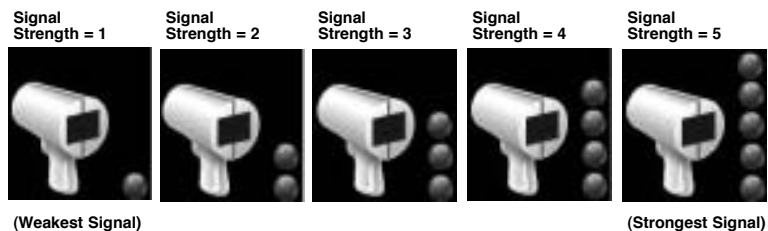
Audio Alerts

A distinctly different **Alert** tone is used for each type of signal detected (including separate tones for each laser signal). For X, K, Ka and Ku band radar signals, the tones will repeat faster as you approach the signal source. The repeat rate of the tones gives you useful information about the signal detected. See responding to alerts on page 28.

Visual Display

An indication of the type of signal detected will appear in the OLED Data Display. During X, K, Ka and Ku alerts, you will also see symbols indicating the strength of the signal detected on a scale of one to five. Pop alerts always show at level five as soon as they are detected.

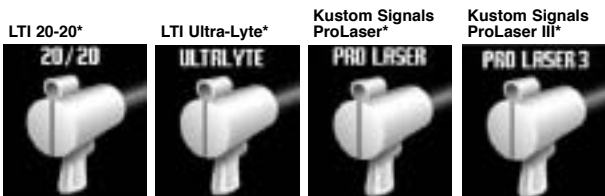
Signal Strength



Radar Signals and Visual Displays



Laser Signals and Visual Displays



* Your detector provides 360° detection of these signals.

NOTE
Beep rate changes with different laser alerts.

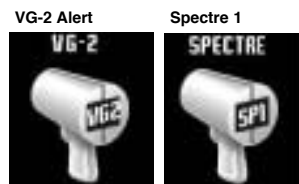
Strobe and Safety Alert Signals and Visual Displays



* Your detector provides 360° detection of these signals.

NOTE
There are different tones for each Safety Alert.

VG-2 and Spectre 1 Alert Signals and Visual Displays



NOTE
There are different tones for each alert.

Instant-On Detection

Your detector is designed to detect **Instant-On** speed monitoring signals, which can suddenly appear at full strength.

NOTE
You should take appropriate action immediately whenever an instant-On alert is given.

Pop Detection

Your detector is designed to detect single pulse mode radars. These radars are designed to have a low probability of detection. You should note that these radar guns have a much shorter range while in this mode.

Responding to Alerts

Description	Interpretation	Recommended Response
Tone repeats slowly at first, then	Probably police radar.	FULL ALERT
Tone sounds one time only.	Probably a false alarm, but possibly pulsed radar.	Exercise caution
Tone instantly begins	Radar, Spectre 1 or VG-2 nearby	FULL ALERT
Tone repeats slowly as you approach a hill or bridge, then speeds up sharply as you reach	Probably police radar beyond the hill or bridge.	FULL ALERT
Tone repeats slowly	Probably a false alarm.	Exercise caution
Any type of laser alert.	Laser alerts are	FULL ALERT
Any Safety Alert or Strobe Alert.	You are nearing an emergency vehicle, railroad crossing, or road hazard (construction, accident,	Exercise caution

Understanding Radar and Laser

Radar Speed Monitoring Systems

Three band frequencies have been approved by the Federal Communications Commission (FCC) for use by speed monitoring radar equipment:

- X band** 10.525 GHz
- K band** 24.150 GHz
- Ka band** 33.400 – 36.00 GHz

Your detector detects signals in all three radar bands, plus Ku band (13.435 GHz), which is an approved frequency used in parts of Europe and Asia.

VG-2 and Spectre 1

VG-2 and **Spectre 1** are “detector detectors” that work by detecting low-level signals emitted by most radar detectors. Your detector does not emit signals that can be detected by VG-2 or Spectre 1, but does detect VG-2 and Spectre 1 signals and will alert you when a device is in use near your vehicle, if you so choose.

Safety Alert Traffic Warning System

FCC-approved **Safety Alert** transmitters emit microwave radar signals that indicate the presence of a safety-related concern. Depending on the frequency of the signal emitted, it can indicate a speeding emergency vehicle or train, or a stationary road hazard.

Because these microwave signals are within the K band frequency, most conventional radar detectors will detect Safety Alert signals as standard K band radar. Your detector, however, is designed to differentiate between standard K band and Safety Alert signals, and give separate alerts for each.

Safety Alert technology is relatively new. Safety Alert transmitters can be found in limited numbers in all 50 states, but the number is growing. Depending on your location, you may not receive these alerts regularly and may often encounter emergency vehicles, trains and road hazards without being alerted. As the number of transmitters increases, these alerts will become more common.

When you receive such an alert, please watch for emergency vehicles ahead of you, on cross streets and behind you. If you see an emergency vehicle approaching, please pull over to the right side of the road and allow it to pass.



Strobe Alert

Special strobes mounted on the light bars of authorized emergency vehicles (fire trucks, police cars, ambulances) automatically change traffic signals as the vehicle approaches an intersection. These strobes and the special strobe detectors located on the traffic signals, introduced fairly recently by 3M and Tomar, are already in use in more than 1000 cities nationwide. Cobra's exclusive **Strobe Alert** detector will detect these special strobes and give an emergency vehicle alert.

When you receive such an alert, please watch for an approaching emergency vehicle and pull over to allow it to pass. To inquire about coverage in your area, contact your local fire and police departments.

LIDAR (Laser)

The correct name for the technology that most people refer to as laser is actually **LIDAR**, which stands for Light Detection and Ranging.

LIDAR operates much like radar. Its signal spreads out like a radar signal, though not as widely. Unlike radar, LIDAR must have a clear line of sight to its target vehicle throughout the entire measurement interval. Obstructions such as sign posts, utility poles, tree branches, etc., will prevent valid speed measurement.

Some common questions about LIDAR include:

- **Does weather have any affect on LIDAR?**
Yes. Rain, snow, smoke, fog, or airborne dust particles will reduce the effective range of LIDAR and can, if dense enough, prevent its operation.
- **Can LIDAR operate through glass?**
Yes. Newer LIDAR guns can obtain readings through most types of glass. However, the laser pulse also can be received through glass to trigger an alarm by your detector.
- **Can LIDAR operate while in motion?**
No. Because LIDAR operates by line of sight, the person using it cannot drive the vehicle, aim and operate the gun all at the same time.
- **Is LIDAR legal to use?**
Yes. It is legal in all 50 states.

Pop Radar Guns

The Pop mode **Radar Gun** is a single pulse Doppler radar that is a feature of a K and Ka (Bee III Ka radar gun) band Instant-On radar gun. It uses a single short time pulse to measure the target vehicle's speed. Despite the fact that the short, single pulse makes the unit very sensitive to officer hand and vehicle movement and reduces the range of the gun in Pop mode to 50% of its range in Continuous Wave mode, this feature is added in an attempt to make the radar gun invisible to Radar Detectors.

Although your detector can sense Pop signals beyond the effective range of Pop radar guns, there will be a signal to sense only if a gun is triggered. In addition, the Pop mode receiver section is more prone to false alerts because of its extra sensitivity. This is especially so in urban areas. As a result, you should consider using the Pop Detect mode only in highway and rural situations. Cobra Electronics has included a user selectable On or Off Pop Detect mode.

Maintenance

Maintenance of Your Radar Detector

Your detector is designed and built to give you years of trouble-free performance without the need for service. No routine **Maintenance** is required.

If you have added the *Optional* GPSL unit to your detector, you can update the database of Photo Enforced locations. Go to Cobra's website (www.cobra.com) and follow the online instructions.

If your unit does not appear to be operating properly, please follow these troubleshooting steps:

- Make sure the power cord is properly connected.
- Make sure the socket of your vehicle's cigarette lighter is clean and free of corrosion.
- Make sure the power cord's cigarette lighter adapter is firmly seated in your cigarette lighter.
- Check the power cord fuse. (Unscrew the ribbed end cap of the cigarette lighter adapter and examine the fuse. If required, replace it with a 2-amp fuse only.)



Specifications

Band and Frequencies

Band	Frequencies		
X Band	10.525	± 0.050	GHz
K Band	24.125	± 0.125	GHz
Safety Alert Traffic Warning System	24.070	± 0.010	GHz
	24.110	± 0.010	GHz
	24.190	± 0.010	GHz
	24.230	± 0.010	GHz
Ka Band	34.700	± 1.300	GHz
Ku Band	13.435	± 0.050	GHz
VG-2	11.500	± 0.250	GHz
Spectre 1	13.300	± 0.200	GHz
Laser	910	± 50	nm
Strobe	700	± 300	nm



WARNING

Modifications or parts substitutions not approved by Cobra Electronics Corporation may violate FCC Rules and void your authority to operate this equipment.

This radar detector is covered by one or more of the following U.S. patents: 5,497,148; 5,594,432; 5,612,685; 6,078,279; 6,094,148; 6,621,447. Additional patents may be listed inside the product or pending.

Optional Global Position System Locator (GPSL)

Overview

The *Optional* GPSL unit monitors vehicle location using the GPS satellite system to add features to your detector. Whenever it is installed and GPS signals are available, it:

- Provides alerts as you approach photo-enforced intersections and locations with fixed red light or speed cameras. The built-in location database can be updated at Cobra's website to stay current with photo-enforced locations.
- Allows you to identify and store up to 1,000 Alert Locations in addition to those in the database.
- Provides direction of travel information using its GPS-based Compass.
- Allows you to see the position (latitude and longitude) of your vehicle.

Where to Mount the *Optional* GPSL

If you purchase the GPSL unit, it will need to be mounted near the detector and connected to it with the USB cable (included with GPSL purchase). Mounting the GPSL is subject to the same considerations as mounting the detector itself and should usually be mounted to the same surface as the detector (see page 3).

An additional requirement for the GPSL is that it needs to "see the sky." The satellites of the Global Positioning System send signals that the GPSL uses to determine its position on earth. Those signals can be blocked or weakened by incoming signals which may include windshield wiper blades, mirrored sun screens, dark tinting at the top of the windshield and heated windshields currently available on some vehicles (Instaclear for Ford, Electriclear for GM). Consult your dealer to see if you have this option.

No external power connection is needed for the GPSL; it is powered from the detector unit.

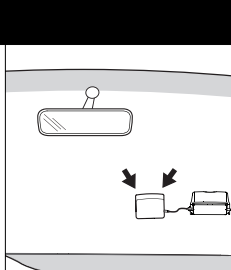


NOTE

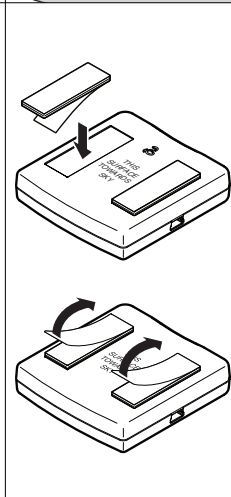
Before starting to mount the *Optional* GPSL unit, check it to establish which side of the unit is labeled "This Surface Toward Sky."

Windshield Mounting

1. Position the GPSL unit before actually mounting it.
 - Connect the USB cable to the detector and GPSL unit.
 - Hold the GPSL unit in place.
 - Mark two corners with a pencil or other non-permanent marker.

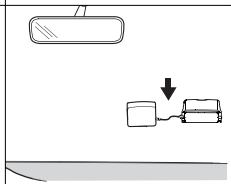


2. Mount the GPSL.
 - Peel the protective film from one side of the two fastener strips and attach them to the GPSL unit.
 - Peel the protective film from the exposed side of the fastener strips and press the GPSL unit to the windshield using the marks made in step 1.
 - Do not pull on the GPSL for 20 minutes.



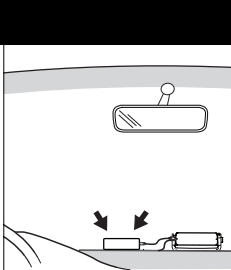
NOTE
The fastener strips cannot be easily removed. The adhesive strength increases with the passage of time.

3. Connect the USB cable between the GPSL and the detector.

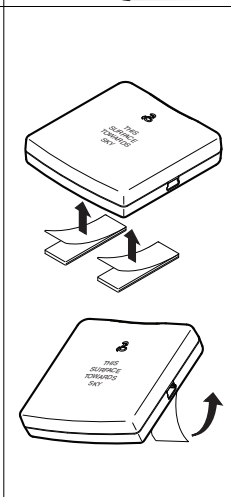


Dashboard Mounting

1. Position the GPSL unit before actually mounting it.
 - Connect the USB cable to the detector and GPSL unit.
 - Hold the GPSL unit in place.
 - Mark two corners with a pencil or other non-permanent marker.

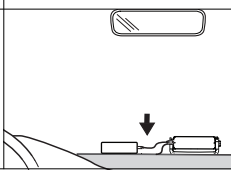


2. Mount the GPSL.
 - Peel the protective film from one side of the two fastener strips and attach them to the GPSL unit.
 - Peel the protective film from the exposed side of the fastener strips and press the GPSL unit to the dashboard using the marks made in step 1.
 - Do not pull on the GPSL for 20 minutes.



NOTE
The fastener strips cannot be easily removed. The adhesive strength increases with the passage of time.

3. Connect the USB cable between the GPSL and the detector.





Initial Satellite Lock

When the *Optional* GPSL is first used or after a prolonged period of nonuse, the GPSL needs more time to detect the Global Position System satellites.

1. After installation of the GPSL, turn the detector unit On with the vehicle in an area clear of obstructions to the sky.
2. Keep the detector turned On for at least 15 minutes to allow fast satellite acquisition in subsequent power-ups. The vehicle can be moving as long as it is in an area where the GPSL can "see the sky."

GPSL Status

The GPS icon changes to indicate received signal status:



NOTE
When GPS signal is lost at the Speed and Lat/Lon screens, the satellite icon will change and the data lines will be filled with dashes.

GPSL Activated Alerts

In addition to the alerts provided by the detector, the GPSL provides alerts based on vehicle location and information in the GPSL databases.

Photo Enforcement Alerts

Whenever your vehicle approaches a photo enforced location contained in the built-in GPSL database, an alarm will be provided with a unique chime and the camera icon will become progressively larger as you approach the location.

User Location Alerts

The system can store up to 1,000 User Location Alerts to provide warnings at locations not included in the built-in GPSL database. Whenever your vehicle approaches a user set location, an alarm will be provided with a unique chime and the flag icon will become progressively larger as you approach the location.

- **To set a User Location:** Press and hold the **Menu/Save** button for at least two seconds when the vehicle is at a location you want to save.
- **To delete a specific User Location:** Press and hold the **Menu/Save** button for at least two seconds while at that location and the User Location Alert is sounding. A specific location can be deleted *only* while at that location.
- **To delete all User Locations:** When an *Optional* GPSL unit is installed, you can delete all user-entered Location Alerts in Menu mode (see page 15).

Speed Alert

When a GPSL unit is installed and receiving a signal and Speed Alert mode is turned On, the detector will sound an alert whenever the vehicle's speed exceeds the set point you have selected. The speed settings can be adjusted in 5 mph or km/h increments. The factory setting is Speed Alert Off. Speed units can be selected as a User setting.

Compass

When a GPSL unit is installed and receiving a signal, you can see your direction of travel based on the GPS system. The GPS compass overrides the magnetic compass.

GPS Database Information

When a GPSL unit is installed, you can view the date on which the installed database of Photo Enforcement Locations was updated. To update the database, go to Cobra's website (www.cobra.com) and follow the online instructions.

Detection

Photo Enforcement Alert Signal



Icon size increases as location is approached.

User Location Alert Signal

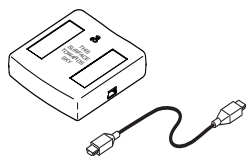


Icon size increases as location is approached.

Nothing Comes Close to a Cobra®

Optional Accessories

You can find quality Cobra products and accessories at your local Cobra dealer, or in the U.S.A., you can order directly from Cobra. See order info on page 41.



GPS Locator Unit

Includes cable.
Item #RDA GPSL



Straight 12V DC Power Cord

Includes plug and fuse
Item #420-030-N-001



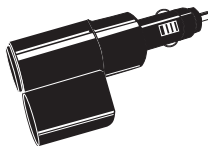
Windshield Mounting Bracket

Includes suction cups
Item #545-159-N-001



Coiled 12V DC Power Cord

Includes plug and fuse
Item #420-026-N-001



Dual Port Power Adapter

Includes adjustable plug
(up to 90°) and fuse
Item #CLP-2B

Product Service

For any questions about operating or installing this new Cobra product, or if parts are missing... **PLEASE CALL COBRA FIRST...** do not return this product to the store. See customer assistance on page A1.

If this product should require factory service, please call Cobra before sending the product. This will ensure the fastest turn-around time on any repair. If Cobra asks that the product be sent to its factory, the following must be furnished to have the product serviced and returned:

1. For Warranty Repair include some form of proof-of-purchase, such as a mechanical reproduction or carbon of a sales receipt. Make sure the date of purchase and product model number are clearly readable. If the originals are sent, they cannot be returned;
2. Send the entire product;
3. Enclose a description of what is happening with the product. Include a typed or clearly printed name and address of where the product is to be returned, with phone number (required for shipment).
4. Pack product securely to prevent damage in transit. If possible, use the original packing material;
5. Ship prepaid and insured by way of a traceable carrier such as United Parcel Service (UPS) or Priority Mail to avoid loss in transit to:

Cobra Factory Service
Cobra Electronics Corporation
6500 West Cortland Street
Chicago, Illinois 60707 U.S.A.;
6. If the product is in warranty, upon receipt of the product it will either be repaired or exchanged depending on the model. Please allow approximately 3 – 4 weeks before contacting Cobra for status. If the product is out of warranty, a letter will automatically be sent with information as to the repair charge or replacement charge.

For any questions, please call 773-889-3087 for assistance.



Limited 1-Year Warranty

For Products Purchased in the U.S.A.

Cobra Electronics Corporation warrants that its Cobra 12 Band Radar/Laser Detectors, and the component parts thereof, will be free of defects in workmanship and materials for period of one year from the date of first consumer purchase. This warranty may be enforced by the first consumer purchaser, provided that the product is utilized within the U.S.A.

Cobra will, without charge, repair or replace, at its option, defective 12 Band Radar/Laser Detectors, products or component parts upon delivery to the Cobra Factory Service Department, accompanied by proof of the date of first consumer purchase, such as a duplicated copy of a sales receipt.

You must pay any initial shipping charges required to ship the product for warranty service, but the return charges will be at Cobra's expense, if the product is repaired or replaced under warranty.

This warranty gives you specific rights, and you may also have other rights which vary from state to state.

Exclusions: This limited warranty does not apply:

1. To any product damaged by accident.
2. In the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs.
3. If the serial number has been altered, defaced or removed.
4. If the owner of the product resides outside the U.S.A.

All implied warranties, including warranties of merchantability and fitness for a particular purpose are limited in duration to the length of this warranty.

Cobra shall not be liable for any incidental, consequential or other damages; including, without limitation, damages resulting from loss of use or cost of installation.

Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.

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